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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/608,790 | 06/27/2003 | Alan Michael Jaffee | 7302 | 6842 |
| 7590 JOHNS MANVILLE Legal Department 10100 West Ute Avenue Littleton, CO 80127 | | | EXAMINER STEELE, JENNIFER A | |
| | | | ART UNIT 1794 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/608,790

Applicant(s)

JAFEE, ALAN MICHAEL

Examiner

JENNIFER STEELE

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7,9,11-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7,9,11-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. **Claim 1-3, 5, 7, 9, 11-23, 25-29, 31-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Graves (US 5,389,716) in further view of Gill (US 4,637,951).** The previous Office Action rejection of 11/27/2007 is maintained.

2. **Claims 18-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Graves (US 5,389,716) and Gill (US 4,637,951) and in further view of Kajander et al. (US 2003/00332350).** The previous Office Action rejection of 11/27/2007 is maintained. Lehnert teaches a fibrous mat-faced gypsum board comprised of a gypsum core that is sandwiched between two sheets of glass mat (ABST). As to claim 18, Lehnert teaches a resinous binder of "modified urea-formaldehyde" (col. 14, lines 35-37). As to claim 19, Lehnert differs from the current

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application and does not teach a modified acrylic latex binder. Lehnert differs from the current application and does not teach a resinous binder comprising a melamine formaldehyde cross-linker with a glass transition temperature between 15-45°C.

Graves teaches a fire resistant bonder for fibrous mats where the mats are comprised of glass fibers or mineral fibers (col. 2, lines 34-36). Graves teaches typical binder systems for glass fibers include urea-formaldehyde, phenolic resins, bone glue, polyvinyl alcohols, acrylic resins and polyvinyl acetates. Graves teaches a binder composition comprising a stable mixture of a fire resistant latex preferably a halogenated latex polymer more preferably also carboxylated; an aqueous aldehyde condensation polymer-based thermosetting resin, preferably an urea-aldehyde thermosetting resin (col. 2, lines 35-40). A thermosetting resin is a crosslinking resin.

Kajander teaches foam coated nonwoven fibrous mat particularly suited for a facer on gypsum wallboards (ABST). Kajander teaches a mat primarily of glass fibers with a minor portion of resinous binder (ABST). Kajander teaches conventional resinous binders of modified urea formaldehyde as well as a melamine formaldehyde, a latex containing mixture of cross linked vinyl chloride acrylate copolymer having a glass transition temperature as high as about 113°F (45°C) and preferably about 97°F (36°C) and a small amount of stearylated melamine [0012]. Kajander teaches about 5% cross-linking agent [0045].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a thermosetting, crosslinking binder in the fibrous glass mat of Lehnert motivated to improve the properties of the bond mat and gypsum board.

It further would have been obvious to employ a binder with a relatively high glass transition temperature of Kajander motivated to improve the heat resistance of the gypsum board. It would have been obvious to employ a crosslinking agent of the amount of 2 to 5 to 10% motivated to optimize the glass transition temperature of the binder.

3. **Claims 16 and 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 4,647,496) in view of Graves (US 5,389,716) and Gill (US 4,637,951) in further view of Carbo (US 2004/0209071).** The previous Office Action rejection of 11/27/2007 is maintained.

Response to Arguments

4. Applicant's arguments filed 2/26/2008 have been fully considered but they are not persuasive. The previous Office Action rejection is maintained.

5. Applicant noted that the reference to Kajander was not published before the filing date of the current application and is owned by the same Assignee and therefore qualifies as prior art under 102(e) reference and is removed under 103(c) since Kajander and the instant application were commonly owned at the time the invention was made. This is sufficient to remove Kajander 6,723,670. However, Kajander US 2003/00332350, published on Feb. 13, 2003) which is prior to the current application filing date of 6/27/2003 and therefore qualifies as prior art under 102(a) and is used to maintain the previous Office Action rejection since 103(c) cannot be invoked to overcome prior art which qualifies under 102(a).

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6. Applicant argues that Lehnert does not teach the fibers sizes as disclosed and while Graves teaches the fiber sizes and blends as claimed, the disclosure of Graves is much broader. Applicant argues that Examiner does not provide any objective basis on which it could be concluded that species within the range of Grave would inherently share the same properties. The same properties that are claimed would be the air permeability of claims 32 and 34. However as stated in the previous Office Action, Graves references Gill with respect to the properties of fibrous mats and Gill does teach fiber sizes of within the species of the range. Gill teaches fibers sizes of an average of 10 micron blended with microfibers. The microfibers have a mean diameter ranging from 0.05 to 3.5 microns (col. 3, lines 40-41). Gill also teaches blends of 10 micron fibers with microfibers to be in the range of 2-37% of microfibers. The table presented in the arguments is amended below to add reference to Gill which would provide reasoning that the claim limitations are met by the combination of Lehnert and Graves and Gill.

| Claim Feature | Claims 1, 29, 31-33; Instant Application | Graves | Gill |
|--------------------------------------|---|-------------|------------------|
| Chopped glass fiber average diameter | 11 +/- 1.5 micron | 3-30 micron | 10 micron |
| Fine staple fiber average diameter | < 5.5 micron | 2-6 micron | 0.05-3.5 microns |
| Proportion of fine staple fibers | 1-30% | 0-100% | 2-37% |

7. Applicant argues that Gill's teachings would lead the skilled artisan to the selection of the smallest possible fiber. Gill is teaching an embodiment wherein a glass fiber mat has a controlled degree of porosity with base fibers (the 10 micron fibers) and

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22% microfibers that are 2.5-4.0 micron. Gill teaches the air permeability as measured by the Frazier Air Permeability test at 5 inch reading of Miriam red oil manometer is 220 cubic ft/min per square ft (col. 5, lines 11-25 and col. 6, lines 1-30). Gill teaches the relationship between the air permeability and fiber size and blend composition is such that a higher percentage of microfibers will increase the density and lower the porosity and air permeability of the mat. Therefore the opposite would be true that if a higher air permeability is desired a lower percentage of microfibers could be employed. Gill's teaching that the permeability of the glass mat can be optimized and controlled by controlling the fiber size and blend and one of ordinary skill in the art could of optimized the fiber sizes and blend ratios and recognized that the results of the combination would have been predictable. As Examiner can not equate the air permeability of Gill measured at 5 inches of Miriam red oil with the differential pressure of 0.5 inches of water reading of the current application, it is presumed that the teachings of Gill would result in a glass fiber mat that could inherently meet the claimed property of air permeability.

8. Applicant argues that the teachings Gill are devoid of any reference to gypsum or other cementitious construction board. As Graves teaches gypsum and cementitious construction board and teaches glass fibrous mats and incorporates by reference the glass fibrous mats of Gill, it would have been obvious to select a glass fibrous mat of Gill for an application with a gypsum or cementitious construction board.

9. Applicant argues the Gill is resistant to strikethrough. Gill teaches a glass fiber mat that is resistant to strikethrough of various curable polymers. Gill also teaches a

glass fiber mat that has controlled porosity and permeability. The current application is claiming the property of permeability and Gill teaches how to obtain permeability in a glass fiber mat. It is not clear how strikethrough and air permeability are related to be diametrically opposed to the level of porosity needed for gypsum board fabrication. Applicant argues that Gill teaches the mats are facers for curable polymer and not construction board. Gill is relied upon for teaching a glass fiber mat which can have a controlled porosity. As Gill teaches a glass fiber mat for use with a curable polymer in applications other than construction board does not preclude the teachings of Gill from being known in the art and applicable to face a gypsum or cementitious board.

10. Applicant further submits that the data provided establishes the unexpected results of the claimed invention is a gypsum board having a smoother surface. As the previous Office Action stated that the unexpected property of smoothness is not a claimed property, Applicant's arguments are not commensurate with the scope of the claims. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., smoothness and paintability) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant states that there is no legal or logical reason why a function property of smoothness or paintability must be expressly included in the claim. As the structure and materials and composition of the combination of Lehnert, Graves and Gill

meets the limitations of the current application, it is presumed that the properties of smoothness and paintability is also inherent to the combination.

11. Applicant argues that one of ordinary skill in the art would be lead away from Kajander because Kajander enables use of larger, less expensive fibers. Kajander is relied upon for teaching the binder components and composition and that one of ordinary skill in the art could of employed the binder and crosslinking agent of Kajander in a glass mat with a reasonable expectation of success.

12. Applicant argues that as Lehnert in view of Graves and Gill teaches the claimed invention, Carbo in combination with Lehnert still fails to teach the claimed invention. As the 35 USC 103 rejection to Lehnert in view of Graves and Gill is maintained, Carbo still presents a finding that one of ordinary skill in the art could have employed a biocide in a mat faced gypsum board with a reasonable expectation of success.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 1794

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

5/22/2008